



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/590,471

08/23/2006

Kazuhiro Yokota

MAT-8885US

9692

52473

7590

01/05/2010

RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

LETTMAN, BRYAN MATTHEW

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

01/05/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,471	<b>Applicant(s)</b> YOKOTA ET AL.	
	<b>Examiner</b> Bryan Lettman	<b>Art Unit</b> 3746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2009 and 20 March 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed September 3, 2009 has been entered. Claims 1-7 remain pending in the application. The previous objection to the specification and drawings for the inclusion of reference numeral 11 in the drawings and not in the specification is withdrawn in light of Applicant's amendment to the specification. The previous objection to claim 1 is withdrawn in light of Applicant's amendment to claim 1.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: V2. In Applicant's remarks, filed September 3, 2009 it is stated that V2 was added to Figure 1, but the submitted Replacement Sheet for Figure 1 does not show V2.

As noted in the prior Action, in addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

Art Unit: 3746

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: The specification contains reference numeral V2, not found in the drawings, as detailed above and in the prior Action.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,288,212 to Lee in view of U. S. Patent Publication 2005/0135955 to Iversen.**

Referring to claim 1, Lee teaches a hermetic compressor comprising:

a hermetic container (1) connected to an external refrigerating system (col. 1, lines 10-21);

a compressing mechanism (4) being accommodated inside the hermetic container (1); and

a suction muffler (50) for forming a muffling space (52a) communicated with the compressing mechanism (4), the suction muffler (50) being provided with an inlet opening (53), the inlet opening (53) communicating the muffling space (52a) with an inside space of the hermetic container (1) (shown in Fig. 7) and closely facing the opening of the suction pipe (41) (shown in Fig. 7).

Lee does not teach an inlet suction pipe having a large diameter part and a small diameter part. Iversen teaches a compressor inlet comprising:

a suction pipe (20) including a large diameter part (21) having a first substantially constant diameter and an opening (shown in Figure) and a small diameter part (22) having a second substantially constant diameter (shown in Figure) and connected to an external refrigeration system (paragraph [0026], lines 1-4), the suction pipe being fixed with the hermetic container (3), and the large diameter part (21) opening to an inside of the hermetic container (3) (shown in Figure).

It would be obvious to one of skill in the art, at the time of invention, to modify the compressor taught by Lee with the suction pipe taught by Iversen in order to provide a means for directly connecting smaller diameter pipes to the suction pipe (Iversen paragraph [0032], line 5 – paragraph [0033], line 5).

Art Unit: 3746

Referring to claim 2, 3 and 5-7, Lee and Iversen teach all the limitations of claim 1, as detailed above, and Lee further teaches a hermetic compressor wherein:

an opening of suction pipe (41) is larger than an opening area of the inlet opening (53) (shown in Fig. 7);

the inlet opening (53) is protruded from an outer surface of the suction muffler (50) (shown in Fig. 7);

the compressing mechanism (4) includes a cylinder (6) and a piston (7) reciprocating inside the cylinder (6);

the volume of the opening part of the suction pipe (41) is at least 0.1 times and at most 0.6 times of volume in the cylinder from a bottom dead center of the piston to a top dead center of the piston (scaling the volumes of the suction pipe and the cylinder from Fig. 7, the ratio of suction pipe to the volume of the cylinder is within the claimed range, wherein the piston is shown at or near bottom dead center and wherein even if the piston were to be shown in Fig. 7 as above bottom dead center, the volume ratio of the suction pipe to the volume of the cylinder with the piston at bottom dead center would still be in the range claimed; furthermore it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.); and

a distance between the inlet opening (53) and the opening of the suction pipe (41) is at least 0.3 times and at most 1.0 times of a diameter of the inlet opening (53) (shown in Fig. 7).

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,288,212 to Lee in view of U. S. Patent Publication 2005/0135955 to Iversen and U. S. Patent 5,039,287 to Da Costa.**

Lee and Iversen teach all the limitations of claim 1, as detailed above, but don't teach a compressor wherein the distance of the large diameter part to the small diameter part of the suction tube is greater than it's diameter in the large diameter part. Da Costa teaches a compressor wherein:

a distance from the opening of a large diameter part (11) to a small diameter part (10) is larger than an internal diameter of the large diameter part (shown in Fig. 3).

It would be obvious to one of skill in the art, at the time of invention, to modify the compressor taught by Lee with the suction pipe taught by Da Costa in order to provide proper mixing of the cooler refrigerant flowing through the suction tube with the warmer refrigerant already in the hermetic container.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Lettman whose telephone number is (571) 270-7860. The examiner can normally be reached on Monday - Thursday between 9:00 am and 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. L./  
Examiner, Art Unit 3746

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746